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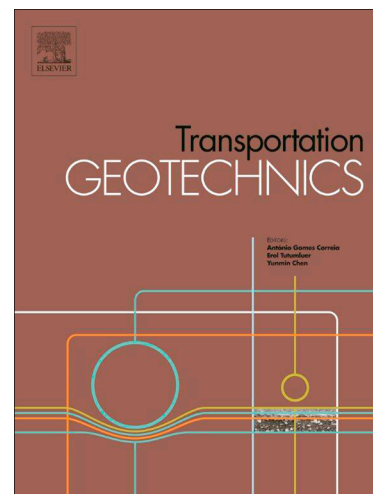
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Evaluation of Plate Load Based Testing Approaches in Measuring Stiffness Parameters of Pavement Bases

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Abstract

In situ tests such as the traditional plate load tests (PLT) or light weight deflectometer (LWD) tests can be used for determining the stiffness parameters of pavement layers, since field measurements yield more practical and realistic results. The stiffness parameters of twelve large-scale laboratory specimens, prepared using four fines contents and three moisture contents, were measured almost simultaneously with PLT and LWD tests. The impacts of variation in fines content and moisture content of base specimens on the moduli measured with these two tests were evaluated, reported and discussed. The LWD moduli demonstrated the same pattern as the PLT moduli computed with different plate diameters and contact pressures. The strongest correlation between the LWD and PLT moduli was observed when the loading plate diameters were the same and the peak contact pressures were similar.

Introduction

Several laboratory and field test methods are available for characterizing the mechanical characteristics of unbound granular base materials. In the laboratory, the repeated load triaxial tests, such as the resilient modulus tests (NCHRP 1-37A 2004), are typically implemented for

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